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PATENT

Attorney Reference Number 6047-67518-01
Application Number 10/731,995

Specification

Please replace the paragraph beginning on page 7, line 9, with the following rewritten paragraph:

—The soldering process can be characterized by a time-temperature exposure profile that specifies temperatures and the durations for which the BGA assembly 100 and the PCB 110 are exposed to the temperatures. The time-temperature exposure profile frequently includes time intervals during which the exposure temperature increases or decreases ("ramp" times) and time intervals during which a constant temperature is maintained ("soak" times). Ramp times generally reduce thermally-induced stresses while soak times permit the BGA assembly 100 and the PCB 110 to reach selected temperatures. Soldering the BGA assembly 100 to the PCB 110 requires sufficient heating to reflow the solder balls 114 to form an electrical connection to the bond pads 140 and the PCB 110. The rib 130 may have a thickness slightly greater than the diameter of the solder balls 114. When the solder balls 140 reflow, the rib 130 eventually contacts the PCB 110, and acts as a stop which fixes the separation of and maintains the planarity of the PCB 110 and the BGA assembly 100. This stop function is enhanced by positioning the rib about the entire periphery of the substrate. However, the stop function may be achieved by the placement of a section of elongated rib on two or more sides of the perimeter of this substrate or by alternative rib placements. For example, a rib can be placed on an interior portion of the surface 109, so that the rib is within the array of solder balls 114.--

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